

1st Grade: SIMILARITIES AND DIFFERENCES (BIODIVERSITY)

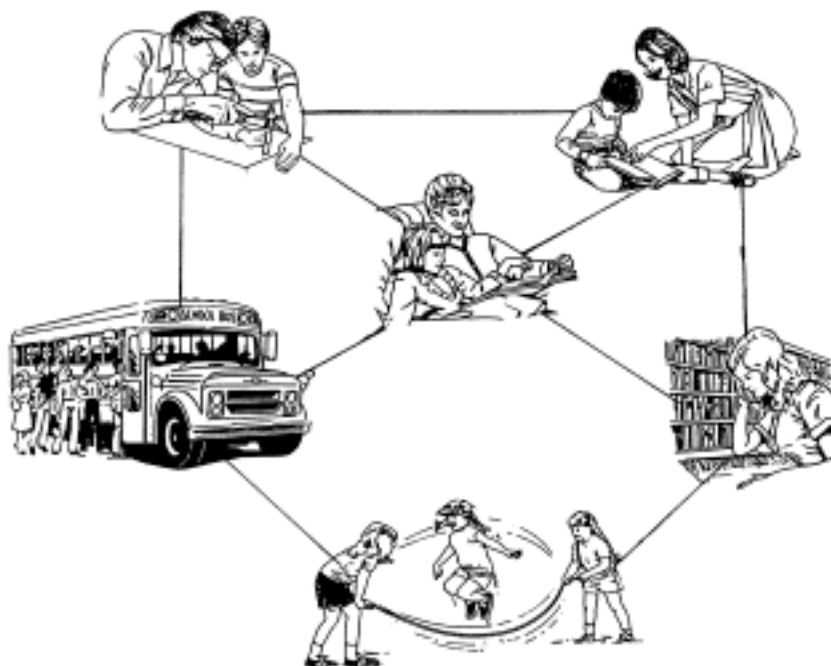
Goals: This unit sensitizes students to the environment and excites them about exploring nature. The students will compare their home environment with the environment in the park. They will begin to discuss biodiversity and its importance in nature.

Objectives: By completing this unit the students will be able to:

1. define similarities and differences, the basic concept of biodiversity.
2. create a list of similarities and differences between people in their community.
3. create a list of similarities and differences between animals and between plants.
4. recall 3 of the components of a habitat
5. discuss how similarities and differences affect competition for food.

These objectives will be achieved in three stages:

- Nametags, pre-visit activities and information – teacher(s) will complete **Nametag Activity** and select at least one **Pre-visit Activity** to do in the classroom before visiting Wind Cave National Park. Selection of activities will be communicated to the ranger leading park program.
- Park activities – ranger directed with assistance and supervision of the teacher and/or teacher aide.
- Post-visit activities – teacher(s) will select at least one **Post-visit Activity** to do in the classroom after visiting Wind Cave National Park.



Pre-Visit Preparations:

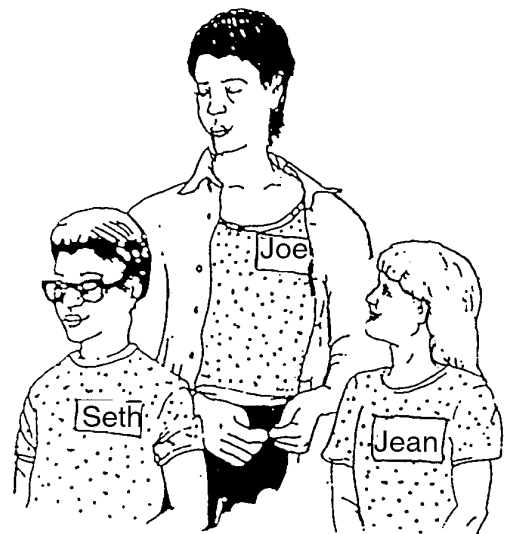
Nametags - Who Am I?

Objective: Students will extend the concept of human community (ecosystem) to the natural world. They will learn about members of the Wind Cave National Park community.

Procedure: Students will make a nametag. They should select a Wind Cave National Park community member from the list below to illustrate their nametag. In addition to making the nametag, the students should learn something about the community member they have selected.

Suggested Name Tag List:

Bison	Woodpecker
Mule Deer	Buffalo Grass
White-tailed Deer	Juniper Tree
Prairie Dog	Prairie Rattlesnake
Meadowlark	Black-footed Ferret
Coyote	Grasshoppers
Water	Wind Cave Visitor
Bull Snake	Butterfly
Ponderosa Pine	Eagle
Pasqueflower	Great Horned Owl
Elk	Moth
Cave	Decayed Plants
Cottontail Rabbit	Bat



Students should arrive knowing that there are three communities at Wind Cave National Park: the prairie, the forest, and the cave. Have the students imagine that they are their community member and ask them why they live at Wind Cave National Park. Ask them how each animal in the park is different and why those differences are important. Ask question such as: what would happen if all of the animals ate the same food or lived in the same burrow? What would happen to all of the food?

Pre-Visit Activities:

Your Classroom As A Community

Objective: Students will describe the roles of members of their school community. They will evaluate how their system works and will recognize their own importance to their community.

Procedure: Communities, or as scientists say "ecosystems" are functioning everywhere around us - including in your classroom. Discuss the concept of community with your classroom, what does it mean? Describe the human system around you, in your school or your town. Have the students describe the people in the school community and what their roles are. Make a list, which could include:



Student
Teacher
Principal
Janitor(s)
Cook(s)
Superintendent
Parents
School Board



Are these roles important? What would happen if...

- the teacher was absent?
- the students were all sick?
- janitors did not clean any more?
- the school board decided you did not need a principal?

Ask the students to think about their own role in the system. Are they important? What special things can they think of that they contribute? Would their classroom be the same without them?

Have the students draw a picture of their role in their classroom and tell how they are important to the classroom. Have the students exchange names and discuss the role of another student.

Animal Worksheet

Objective: Students investigate animal habitats and their diets by matching animal pictures to pictures of the food the animals eat and the places they live. The students also begin to develop an understanding of predator – prey relationships.

Materials: Copies of the worksheets, green and red construction paper, scissors, glue

Background: Some animals eat only plants while others eat only other animals and still others eat both plants and animals. Animals that eat only plants are called herbivores; animals that eat both plants and animals are omnivores; and carnivores are animals that eat meat. Note: The information from this activity is used later with the post visit activity – **Animal Connections Game**.

Procedure: Make enough copies of the worksheet for all the students. Have the students match the pictures of the animals to the places where they live and things they eat.

Have the students select an animal from the worksheet and study what that animal eats, where it lives, and what it has in common with other animals. Try to make certain that the children select animals from all groups (plant eaters, meat eaters and animals that eat anything). Discuss with the students the words that describe what an animal eats: herbivore (plant eater), omnivore (eats both plants and animals), and carnivore (meat eater).

Have the students cut out their animal picture and paste it to color coded construction paper: green for plant eaters – herbivore, red for meat eaters – carnivore, and both for an animal that eats both – omnivore.

Discuss with the children that most students are omnivores – they eat both meat and plants (vegetables). However, some of the children in your classroom might be vegetarians, or herbivores. Talk with the class and discuss the diversity in your classroom – what are the food preferences in your class. Discuss why that diversity makes the animal kingdom stronger. Don't forget include insects in your discussion. They too fit into these classifications. This diversity in food needs is an important part of biodiversity.

Note: These colored tags are used in the post-visit activity **Animal Connections Game**.

Extension: Have the students gather in groups of herbivores, omnivores, and carnivores. Have the groups discuss what the animal they selected eats and what it has in common with other animals. Have them present their information to the classroom. Discuss the similarities within the groups and differences between the groups.



Noah's Ark

Objective: Students will be able to identify similarities and differences in animal behavior or characteristics that help animals identify members of their own species.

Materials: Copies of the enclosed graphics.

Procedure: Copy the graphics pages twice so you will have two bison, two deer, two rabbits, etc. Shuffle the cards and secretly give each student their creature making certain that every student has a pair somewhere in the room. Instruct the students not to show their card to anyone else. On your signal, the children all begin acting out the sounds, shapes, and typical movement of their character. (Talking is prohibited.) The object is for each animal to find his/her partner by noticing similarities in behavior. When they have "found" each other, they move out of the group. At the end, everyone acts out their character for the whole class and everyone guesses which animal the pair represents. Have each pair discuss how they found their partner from the other animals. This activity can be found in the book *Sharing Nature with Children* by Joseph Cornell.

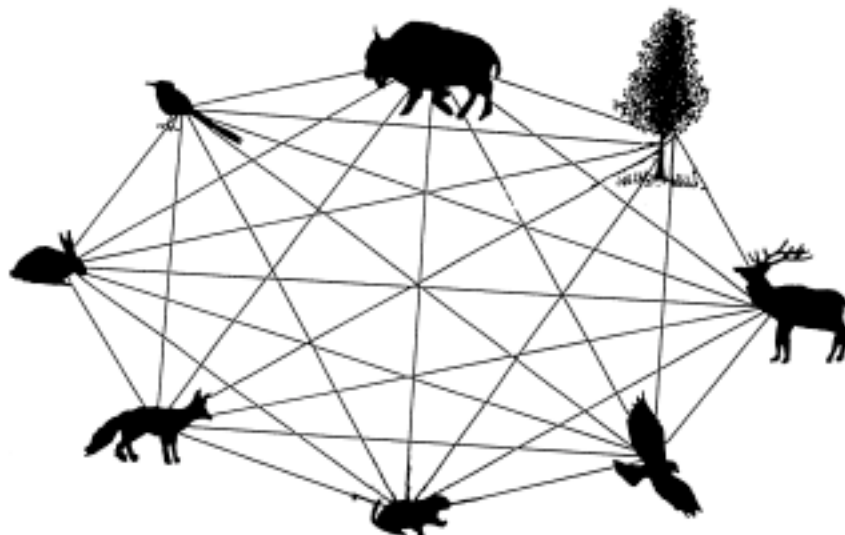


Post-Visit Activities:

Web of Life

Objective: This activity reinforces the "Connections" activity done at the end of your visit to Wind Cave National Park.

Procedure: Using the student's name tags from their visit to Wind Cave have the students make a bulletin board in their classroom showing the "web of life" activity.



Animal Connections Game

Objective: Using the knowledge learned in the **Animal Worksheet** activity, students will identify connections among animals. They will identify and explain relationships between herbivores, carnivores, and omnivores.

Materials: Tape or safety pins, pictures from **Animal Worksheets**

Procedure: Tape the tags made in the **Animal Worksheet** activity to the students' shirts reviewing the terms herbivore, carnivore, omnivore, predator, and prey. Have the students form two teams and tell them that they are going to play a form of "Red Rover, Red Rover."

1. The students, wearing their nametags from the Animal Worksheets, form two teams.
2. The first person on the left side of the team's line starts. When the team calls "Red Rover, Red Rover send (the name of an animal) over", that person must call an animal that matches what they are. A herbivore can only call a herbivore or a carnivore can only call a carnivore. An omnivore can call anything since it has something in common with all of the groups. But the omnivore has to say how that person (animal) matches them. The colors on their tags will give them hints about which animal they can call. If, as the game progresses, there are no matching herbivores or carnivores left the calling person can select an omnivore since they will eat either plants or animals. If, near the end of the game, there are no herbivores for the calling person to select, that person has to go to the other side. (Because if only carnivores are left the carnivores would eat the calling herbivore, it would be the animal's prey – so they go to the other side. Or if there were no carnivores, the carnivore would die and become a plant for the herbivore to eat! They have to go to the other side.)
3. Once the person has been called s/he runs to the other side and tries to break through the line. If s/he is unsuccessful, s/he stays on that side going to the right side (end) of the line. If s/he is successful, s/he takes an animal back to his/her team. The animal has to be one with which s/he has some connection. For example if the person breaking through is a coyote, s/he can bring back any herbivore because s/he would eat them, because s/he is a predator. If the person is a bison, s/he might bring back a prairie dog because they both live in the prairie and eats grass. They must tell the group why they are taking that person (animal) with them. If they can't make a connection, they have to stay on the side just like the people who can't break through.
4. The game progresses with the next team calling "Red Rover." The person on the left side of the line makes the selection of the person (animal) to run across.
5. Continue until desired and then discuss the types of relationships that the students named and why it was sometimes hard to make the connections.



Vocabulary List:

The following vocabulary words are those most likely to be used when students visit Wind Cave National Park. They are included here for use by teachers and/or students. You may use them to enhance the students' oral vocabulary. Students should leave Wind Cave with a good understanding of these words and concepts.

adapt - to change or adjust to new surroundings or conditions.

behavior - the way something behaves or acts.

carnivore - a meat-eating animal; example: an eagle.

cave - a hollow space inside the earth large enough for a person to enter.

community - a group of plants and animals in a given place or area that depend on each other.

different - not alike, not the same.

environment - surroundings; all of the things which surround and influence the development of an organism.

extinct - a plant or animal that is no longer found, for example: dinosaurs.

forest - a thick growth of trees and shrubs covering a large area.

habitat - the place where a plant or animal lives.

herbivore - a plant-eating animal; example: a bison.

home - a place where something sleeps.

limestone - a sedimentary rock made of the shells and skeletons of sea animals.

omnivore - an animal that will eat meat or plants; example: a coyote.

pollution - the act of making dirty; to pollute.

prairie - a large treeless area covered with grasses.

predator - an animal that catches and kills another animal for food.

prey - an animal that is caught by a predator.

protect - to keep from injury or danger.

similar - nearly the same; almost alike.

web - a series of connecting strands, for example: a spider web.